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(54) Safety support system for a protective cover for a swimming pool and swimming pool comprising such safety support system

(57) The present invention relates to a safety support system (9) for a protective cover for a swimming pool (1) having a delimiting wall (2, 3, 4, 5). The safety support system (9) comprises supporting means (13) which are movable between a first position in which they rest against the delimiting wall (2, 3, 4, 5) or are coun-

tersunk into the delimiting wall (2, 3, 4, 5) of the swimming pool (1) and a second position in which they protrude from the delimiting wall (2, 3, 4, 5) and extend along at least a part of the delimiting wall (2, 3, 4, 5) of the swimming pool (1). The present invention also relates to a swimming pool (1) comprising such a safety support system (9).

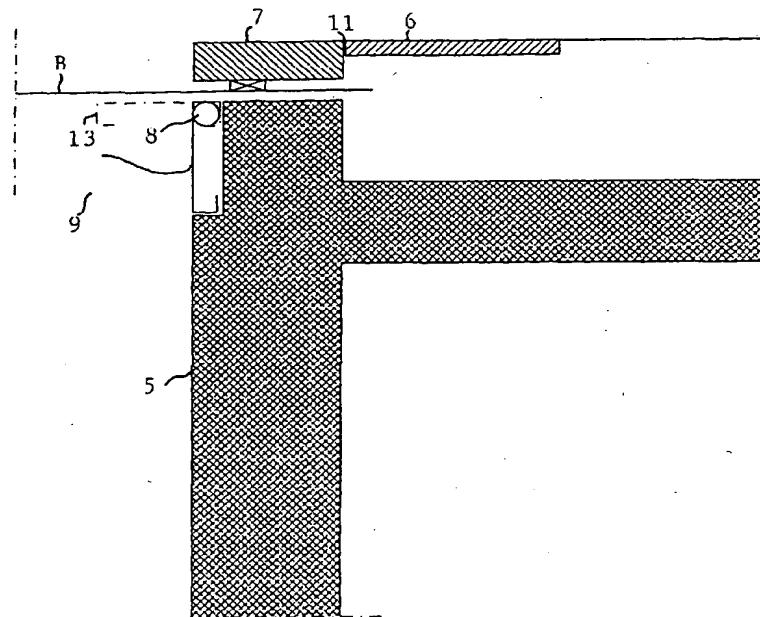


Fig. 2

Description

[0001] The present invention relates to a safety support system for a protective cover for a swimming pool. The present invention also relates to a swimming pool comprising such a safety support system.

[0002] A safety support system for a protective cover for a swimming pool is for example known from US-A-3.144.665. US-A-3.144.665 discloses a protective cover comprising a multitude of buoyant, elongated rigid cover members flexibly connected in side by side relationship and freely floating on the surface of the water in the pool when extended. The cover members extend transversely between opposed walls of the pool with the ends of the cover members closely adjacent the walls of the pool. The swimming pool is provided with safety support means which extend along the walls below the surface of the water in closely spaced relationship below the ends of the rigid cover members adapted to be connected by and support the cover members if these are forcibly immersed. The protective cover further comprises means for winding the flexibly connected cover members for storage at one end of the pool and for unwinding them onto the pool's surface for use. The safety support system has the purpose to avoid that a person, for instance a child, or another object falling onto the cover of the swimming pool when the latter is not in use causes the cover to dip deep into the water whereby the person glides from the cover into the water and possibly below the cover in the case the person glides in between two adjacent cover members. The safety support system can have any desired form, such as a hand-rail or a track or a shelf in the pool wall. In each case, the support means extend over a certain distance away from the wall to which they are connected towards the opposite wall. Only in that way the support means can fulfil their supporting function.

[0003] The safety support system of US-A-3.144.665 has the disadvantage that the safety support means are mounted in a fixed position with respect to the delimiting wall of the swimming pool. Thus, these safety support means are always in the position for supporting the cover members, thereby extending over a certain distance from the wall to which they are connected in the direction towards the opposite wall. When the swimming pool is in use, a person swimming in the pool can therefore be hindered by these safety support means. Moreover, the person swimming in the pool can hurt himself on these support means.

[0004] It is the object of the present invention to provide a safety support system for a protective cover for a swimming pool whereby the risk of hindering persons swimming in the swimming pool can be reduced.

[0005] This can be achieved with the technical features of the first claim.

[0006] The safety support system of the present invention comprises supporting means which are movable between a first position in which they rest against

the delimiting wall or are countersunk into the delimiting wall of the swimming pool and a second position in which they protrude from the delimiting wall. The supporting means extend along at least a part of the delimiting wall of the swimming pool. In this way, the supporting means of the safety support system of the present invention can be moved to a position in which they do not substantially extend away from the delimiting wall of the swimming pool towards the opposite wall. Therefore, the risk of hindering persons swimming in the pool can be reduced.

[0007] Preferably, the supporting means are movable between the first and second position in a canting way.

[0008] The canting of the supporting means is provided by connecting the supporting means to an axle for driving the supporting means between the first and second position, whereby the axle extends along or in the delimiting wall of the swimming pool and is connected to a driving for driving the axle. The supporting means are thus rotatable by means of the axle from the first to the second position. This allows the supporting means to be easily brought from the first to the second position, and enhances the use-friendliness of the system.

[0009] The invention and preferred embodiments of the invention are further elucidated in the following figures and description of the figures.

[0010] Figure 1 shows a top view of the swimming pool comprising a preferred embodiment of the safety support system for a protective cover according to the present invention.

[0011] Figure 2 is a cross section of the swimming pool along line A-A of Figure 1.

[0012] The swimming pool 1 shown in Figure 1 has a rectangular shape with opposite transverse sides or delimiting walls 2, 3, opposite longitudinal sides or delimiting walls 4, 5, an outer tiled border 6, and an inner border 7. The swimming pool may however have also another shape, for instance a round or a square. The inner border 7 is separated from the outer border 6 by a joint 11, through which water can flow away.

[0013] The protective cover (not shown) may comprise a plurality of parallel elongated cover members connected in side by side relationship to each other, which are enrolled to form a roll. This roll is mounted on a first side of the swimming pool 1. From there, the roll may be enrolled by hand or automatically. The roll may be mounted on one of the transverse sides 2, 3 of the swimming pool 1. However, it may also be mounted on one of the longitudinal sides 4, 5.

[0014] When unrolled, the cover members are parallel to the transversal sides 2, 3 and extend transversely between the opposed longitudinal sides 4, 5, with the opposite ends of each cover member closely adjacent these longitudinal sides 4, 5 of the swimming pool 1.

[0015] When unrolled, the cover members thus substantially completely cover the surface of the water from the transverse side 2 to the opposite transverse side 3. The cover members freely float on the surface of the water (line B

in Figure 2) when unrolled.

[0015] The cover members can be made of any suitable material which allows them to float on the surface of the water. Examples of suitable materials include plastics, such as polyvinyl chloride, polyethylene or polypropylene. The cover members may be hollow or may be filled with foam, for instance polyurethane foam. The material of the cover members itself and its thickness must be such that the cover member can carry a person or another object falling on the protective cover.

[0016] The cover members are connected in side by side relationship in longitudinal direction to each other. The cover members may be connected to each other by any connecting means suited thereto. Preferably, the cover members are connected to each other in such a way that allows them to be wound on the roll without being bent in their longitudinal direction.

[0017] In Figure 1, the safety support system 9 is mounted on at least one and preferably on both longitudinal sides 4, 5 perpendicular to the transversal sides 2, 3 where the protective cover is installed. It is also possible to provide an additional support system 9 on at least one of the first transversal sides 2, 3.

[0018] In case the protective cover is installed on one of the longitudinal sides 4, 5, the safety support system 9 is mounted on at least one and preferably on both transversal sides 2, 3 perpendicular to these longitudinal sides 4, 5. In this case, it is also possible to provide an additional support system 9 on at least one of the longitudinal sides 4, 5.

[0019] The safety support system 9 comprises an axle 8 to which supporting means 13 are connected.

[0020] The axle 8 is positioned against the longitudinal side 4, 5 of the swimming pool 1 at a certain distance below the water surface (line B in Figure 2) and extends parallel to the longitudinal side 4, 5 along at least part of the length of the longitudinal side 4, 5. It is also possible that the axle is positioned at a certain distance above the water surface. The axle 8 is preferably supported at various positions, such that bending in longitudinal direction of the axle is prevented. The axle 8 drives the support system 9 and is extended to a driving, for instance a reduction motor 18, which is situated outside the water and drives the axle 8.

[0021] As illustrated in Figure 2, the supporting means 13 are rotatable by means of an axle 8 between a first and a second position. In the first position, the supporting means 13 are countersunk or rest against the longitudinal side 5 of the swimming pool 1, or take any other suitable position. In the second position, the supporting means 13 protrude from the longitudinal side 5 and support the cover members. hereby, the supporting means 13 extend substantially parallel to the water surface. In this second position, the supporting means 13 extend perpendicular with respect to the longitudinal direction of the cover members. It is however also possible that the supporting means 13, in this second position, extend in an angle with respect to the longitudinal direction of

the cover members. Also, in the second position, the supporting means 13 are present at a certain distance below the water surface (line B) such that the floating of the cover members is not affected. This floating of the cover members entails the advantage that only small forces are needed for winding or unwinding the cover members on or from the roll.

[0022] Alternatively, it is possible that the supporting means 13 in the second position are located at a certain height above the water surface (line B). In this case, the cover members are also located at a distance above the water surface. To achieve this, the cover members are at their opposite ends in longitudinal direction of the cover members for instance provided with wheels which are movable on rails mounted on the longitudinal sides of the swimming pool at a certain height above the water surface and extending along substantially the entire length of the side. Due to the moving of the wheels in the rails, again only small forces are needed for winding or unwinding the cover members on or from the roll.

[0023] Alternatively, it is possible that the supporting means are movable between the first and the second position in a sliding way. Thereto, in the first position, the supporting means may for instance be received in a corresponding groove present in the longitudinal side of the swimming pool. This may be a groove extending parallel to the bottom of the swimming pool and extending along substantially the entire length of the longitudinal side of the swimming pool, the groove being present at a height below the water surface. It is however also possible that the groove extends perpendicular to the bottom of the swimming pool. The sliding of the supporting means from the first to the second position can be achieved by any mechanism suited thereto.

[0024] The supporting means 13 may for instance be a plate or a grid or a profile. They can be made of any suitable material which allows them to support the cover members in a stable way. Examples of suitable materials include plastics, such as polyvinyl chloride, polyethylene or polypropylene.

[0025] The profile 13 extends along substantially the entire length of the longitudinal side 4, 5, of the swimming pool 1 in order to be able to support all the cover members floating on the water surface. It is also possible that per side of the swimming pool more than one profile 13 is connected to the axle 8. In this case, however, the profiles 13 are preferably mounted adjacent to each other such that the cover members are supported along the entire length of the longitudinal side 4, 5.

[0026] The protective cover and the safety support system 9 are positioned relative to each other in such a way that an optimal safety is achieved. When the safety support system 9 is present at one only side perpendicular to the side where the protective cover is installed, so at one of the longitudinal sides 4, 5, the supporting means 13 preferably support the protective cover over substantially the entire length of the cover members. When the safety support system 9 is present at both op-

posite sides perpendicular to the side where the protective cover is installed, so at both opposed longitudinal sides 4, 5, it is sufficient that the supporting means 13 support the cover members over only part of their length. Indeed, the cover members rest in this case in the middle on the water surface which results in a sufficient support for the cover members.

[0027] It may also be possible that the supporting means 13 comprise a profile 13 which is telescopic or alternatively, collapsible. This may be necessary in the case where the supporting means 13 have to support the protective cover over substantially the entire length of the cover members, extending parallel to the transverse sides of the swimming pool, and where the swimming pool has a width which is larger than the depth. In order to bring the supporting means from the second position to the first position in which they for instance rest against the delimiting longitudinal wall, the telescopic parts of the profile are moved into each other such that the profile, in its collapsed state, can rest against the delimiting wall.

Claims

1. A safety support system (9) for a protective cover for a swimming pool (1) having a delimiting wall (2, 3, 4, 5), **characterized in that** the safety support system (9) comprises supporting means (13) which are movable between a first position in which they rest against the delimiting wall (2, 3, 4, 5) or are countersunk into the delimiting wall (2, 3, 4, 5) of the swimming pool (1) and a second position in which they protrude from the delimiting wall (2, 3, 4, 5) and extend along at least a part of the delimiting wall (2, 3, 4, 5) of the swimming pool (1).
2. A safety support system (9) for a protective cover for a swimming pool (1) as claimed in claim 1, **characterized in that** the supporting means (13) are movable between the first and second position in a canting way.
3. A safety support system (9) for a protective cover for a swimming pool (1) as claimed in claim 2, **characterized in that** the supporting means (13) are mounted on an axle (8) for driving the supporting means (13) between the first and second position, the axle (8) extending along or in the delimiting wall (2, 3, 4, 5) of the swimming pool (1), the axle (8) being connected to a driving (18) for driving the axle (8).
4. A safety support system (9) for a protective cover for a swimming pool as claimed in any one of the preceding claims, **characterized in that** the supporting means (13) comprise a longitudinal profile or plate or grid.
5. A swimming pool (1) having a first delimiting wall (2, 3, 4, 5) in which a safety support system (9) according to claims 1-4 is mounted on the first delimiting wall (2, 3, 4, 5).
6. A swimming pool (1) according to claim 5, **characterized in that** the safety support system (9) is mounted on a height which is below the water surface in the swimming pool (1) during normal use.
7. A swimming pool (1) according to claims 5-6, **characterized in that** the swimming pool (1) is provided with a protective cover which is mounted on a second delimiting wall (2, 3, 4, 5) of the swimming pool (1) perpendicular to the first delimiting wall (2, 3, 4, 5), the protective cover comprising a plurality of elongated cover members connected to each other in longitudinal direction in side by side relationship, in which the cover members extend parallel to the second delimiting wall (2, 3, 4, 5) of the swimming pool (1), and **in that** the swimming pool has a third delimiting wall (2, 3, 4, 5) opposite the first delimiting wall (2, 3, 4, 5), the ends of the cover members lying closely adjacent the first and third delimiting walls (2, 3, 4, 5) of the swimming pool (1).
8. A swimming pool (1) according to claim 7, **characterized in that** a second safety support system (9) is mounted on the third delimiting wall (2, 3, 4, 5).
9. A swimming pool (1) according to claim 8, **characterized in that** a third safety support system (9) is mounted on the second delimiting wall (2, 3, 4, 5).
10. A swimming pool (1) according to any one of claim 8, **characterized in that** a fourth safety support means is mounted on a fourth delimiting wall (2, 3, 4, 5) of the swimming pool (1) opposite the second delimiting wall (2, 3, 4, 5).

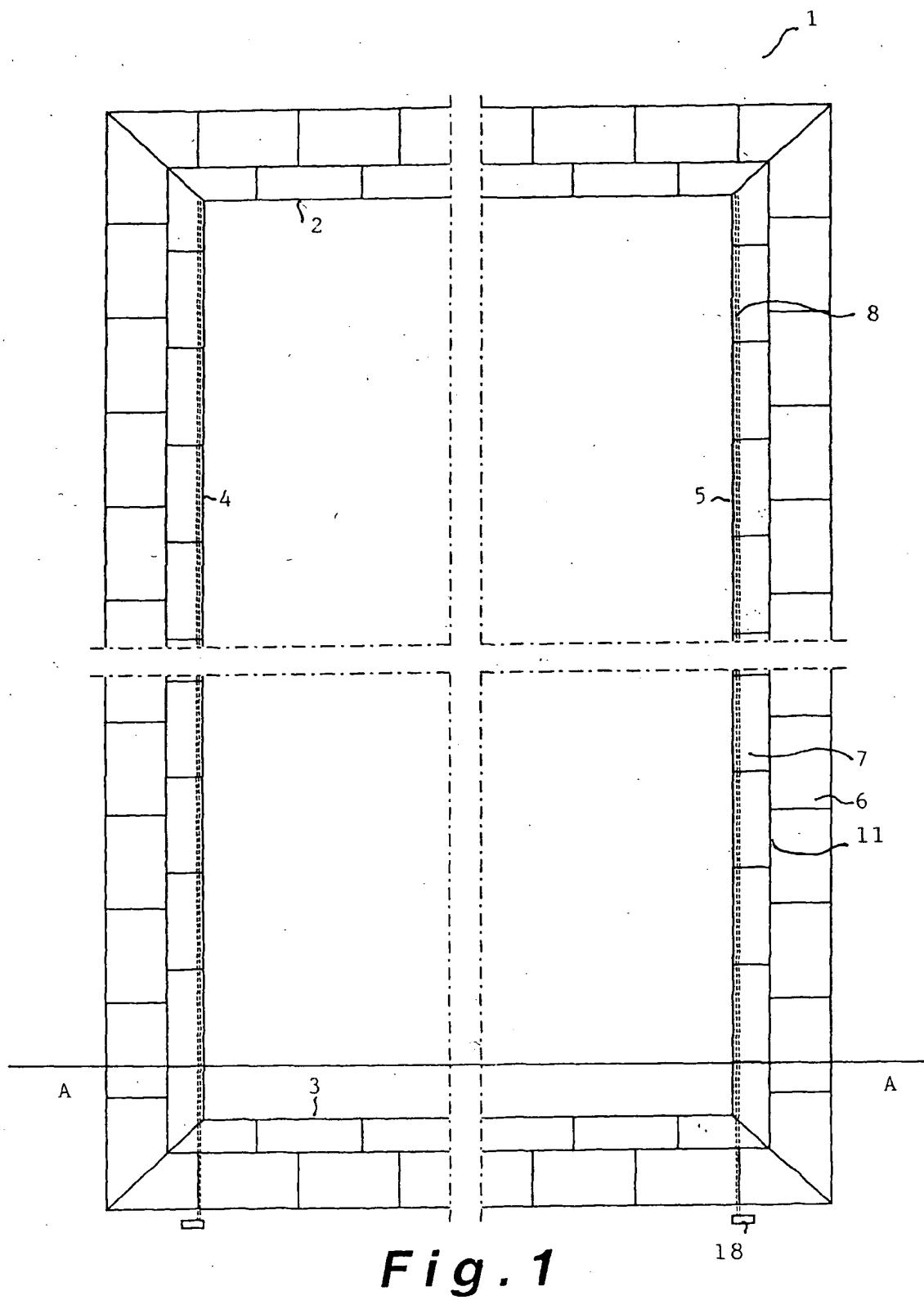


Fig. 1

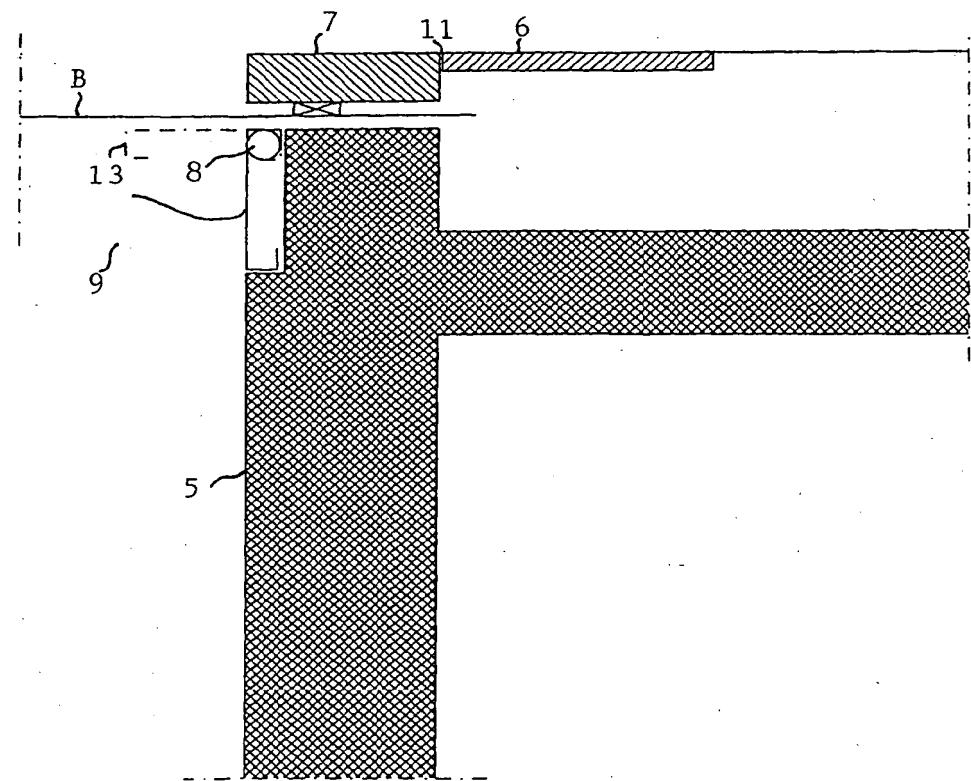


Fig. 2



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EUROPEAN SEARCH REPORT

Application Number

EP 02 44 7133

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)						
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim							
X	CH 608 553 A (MABILIA & CIE) 15 January 1979 (1979-01-15) * page 2, line 27 - line 37; figures *	1,5	E04H4/08 E04H4/06						
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TECHNICAL FIELDS SEARCHED (Int.Cl.7)									
E04H									
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 34%;">Examiner</td> </tr> <tr> <td>THE HAGUE</td> <td>8 October 2002</td> <td>Fordham, A</td> </tr> </table>				Place of search	Date of completion of the search	Examiner	THE HAGUE	8 October 2002	Fordham, A
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THE HAGUE	8 October 2002	Fordham, A							
<p>CATEGORY OF CITED DOCUMENTS</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document </td> <td style="width: 50%;"> I : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document </td> </tr> </table>				X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document	I : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document				
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 44 7133

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82